Administrivia

- (None.)

Slide 1

"What Command Do I Use To . . . ", Continued

- Continuing from last time a tour of some commands I have found useful . . .

- (The point of this tour is not to present details of any of the commands, just to make you aware they exist, so you can follow up on those that seem useful.)

  (In fact, that's really the point of this course in general!)

Slide 2

Commands for Accessing Other Machines

Slide 3

- `ssh` to remotely log in / run commands.

  `-X` flag allows running X-based (GUI) programs.

  `ssh user@machine` logs in as a (possibly) different user.

  `ssh user@machine "command"` to execute single command (or commands). *Note* that this may bypass some of normal shell setup (e.g., reading `.bash\_profile`.

  Can set up so it doesn't prompt for a password. Link to instructions on "Useful links" page.

- `rsh` and `telnet` to provide similar functionality, but with less security. Often turned off by sysadmins for that reason.

Commands for Copying Files Between Machines

Slide 4

- `scp` to copy file(s) between machines. If you set up `ssh` to not prompt for password, applies to this too.

- `rsync` to "synchronize" a target file/directory with a source. Useful in maintaining backup. Example:

  `rsync -avz --delete /users/yourName/ /directory-for-backup`

  Precede directory/file with `user@machine:` to copy to/from remote machine. `-e ssh` may be needed in order to use SSH rather than RSH.

Commands for Working with Programs

- $-E$ (show preprocessor output) and $-S$ (generate assembly-language output) flags on most compilers.

- `gdb` source-level debugger. Semi-graphical version available from within `emacs`.

Slide 5

Commands for "Batch" Programs

- `batch` and `at` to run something "in batch mode" / at specified time. If output is not redirected, it's sent to you by e-mail.

- `crontab` to set up "cron job" to execute periodically. Not necessarily restricted to root user.

Slide 6

- `nohup` to run a command in a mode in which it keeps running even when the launching terminal session goes away. Caveat: Command can't make use of terminal input/output (so all input/output must be routed to a file, a pipe, etc.). Or run using `screen` (later).

Slide 7

Web-Related Commands

- `wget` or `curl` to download a Web page or pages. `wget` has options to allow downloading a page and everything it references.

- `lynx`, `elinks` (a.k.a. `links`), or `w3m` to browse in text mode. (What's the difference? Slightly different capabilities. Better help (IMO) in `lynx`, but it doesn't do frames. `elinks` does frames but help isn't (IMO) as useful. I haven't tried `w3m`!)

Slide 8

Miscellaneous Other Command(s)

- `time` to run a command and say how long it took.

- `urlview` to (try to) find URLs in text and display text-based menu for accessing them.

A Text-Based Window Manager

- `screen` is ... a "virtual virtual terminal", a "text-based window manager", something that multiplexes a physical terminal betwen several processes, usually interactive shells.

- Supports one or more "windows" (programs, usually shells), plus one or more "regions" (areas on screen).

- Functionality includes
  - Ability to leave programs running even if "real" terminal isn't there — i.e., disconnect/reconnect.
  - Ability to copy and paste text among windows, log stuff, etc..

A Text-Based Window Manager, Continued

- You know what to do to find out more ... (Or try `http://www.gnu.org/software/screen`.)

- Some useful info for getting started:
  - `screen` starts things up.
  - `control-A c` creates a new window. `exit` to end. `control-A "` gives menu for selecting window.
  - `control-A S` creates a new region ("splits the screen"). `control-A X` to end. `control-A Tab` switches to next region.
  - `control-A ?` shows key bindings.
  - `control-A D` detaches session. `screen -r` to resume.

Miscellaneous Fun (?) Stuff

Slide 11

- Some selected text-based games installed in
  `/users/cs3190u/games/games`. "Caveat user" — installation was
  quick-and-dirty, so not all games work 100%, but interesting as a sampling of
  what games were like in the (not-always-so-)Good Old Days.

- And of course there's
  `telnet towel.blinkenlights.nl`
  (If you try this — just type the above, and be patient. Use control-] and then
  "quit" to interrupt it if you need to.)

Minute Essay

Slide 12

- Any favorite tools that seem to fit with past two lectures, but that I forgot to
  mention?

- Any "how do I do this?" questions that also fit but that I didn't talk about? (I'll
  talk just a little about X/GUI stuff next week. I might talk just a little about
  sysadmin stuff in a future lecture.)